

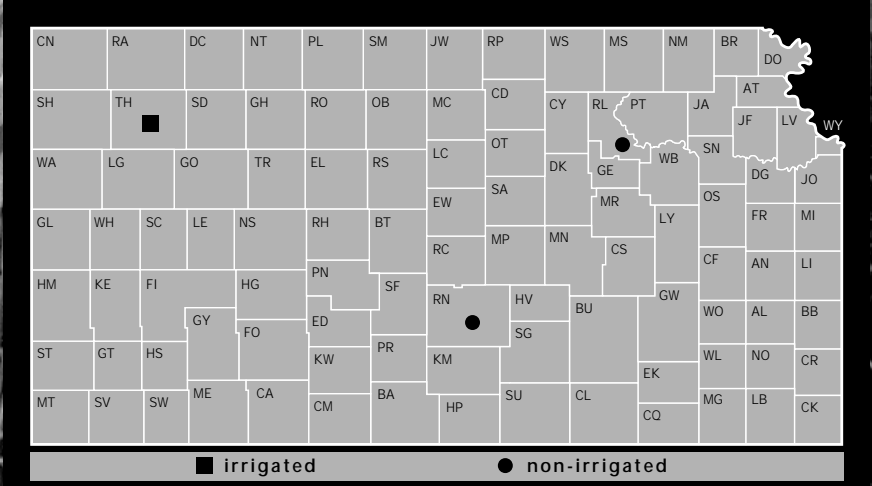
# 2001

KANSAS PERFORMANCE TESTS WITH

# SUMMER ANNUAL FORAGES

REPORT OF PROGRESS 889

Kansas State University  
Agricultural Experiment Station  
and Cooperative Extension Service



# 2001 KANSAS SUMMER ANNUAL FORAGE PERFORMANCE TESTS<sup>1</sup>

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## SUMMARY

This report presents results of tests to compare hybrids of corn, forage sorghum, and sorghum-sudan grown as summer annual forages. Various characteristics of forage production and quality were measured at Colby, Hutchinson, and Manhattan, Kansas.

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## INTRODUCTION

Kansas is a top producer of meat and animal products. An important input for the beef and dairy industries is the fodder or roughage that forms a key element in ruminant diets. In 2001, Kansas farms produced 5.3 million tons of corn and sorghum silage (January 11 Crops Report, Kansas Agricultural Statistics Service). Additional roughage was obtained from other summer annual forages such as sorghum-sudan. This publication presents the results of tests designed to compare forage production and quality of corn, sorghum, and sorghum-sudan hybrids.

## PROCEDURES

Crop performance tests in Kansas are a cooperative effort of K-State Research and Extension and the private seed industry. Entry fees from private seed companies help finance the tests. Seed companies receive test announcements and entry forms in late January; deadlines for receipt of completed entry forms and seed are in early March. Because entry selection and location are voluntary, not all hybrids grown in the state are included in tests, and hybrids are not grown uniformly at all test locations.

Seed companies were offered the opportunity to participate in summer annual forage tests at three locations in 2001, Manhattan, Hutchinson, and Colby. Nine companies entered a total of 23 forage sorghum hybrids, and 14 sorghum-sudan hybrids. Only two corn hybrids were submitted, so corn was dropped from the tests.

Three plots (replications) of each hybrid were grown at each location in a randomized complete block design. Each plot consisted of four rows trimmed to a length of 20 or 30 feet, depending on location. Forage and grain yield estimates and samples for moisture and quality analysis were obtained from the center two rows. Entries were arranged so that statistical comparisons could be made among hybrids of the same species and between hybrids of different species.

Each species was harvested as close as possible to the stage of maturity that would optimize yield and quality of forage -- forage sorghum hybrids at mid-dough, and sorghum-sudan hybrids at boot stage. The sorghum-sudan hybrids were harvested twice at Manhattan and Colby. Drought

stress inhibited regrowth at Hutchinson, preventing a second cutting.

Samples from each harvest were collected to determine moisture content and for laboratory analysis of forage quality, including crude protein, neutral detergent fiber (NDF), acid detergent fiber (ADF), and acid detergent lignin (ADL). Crude protein is calculated by multiplying the nitrogen content of the forage by 6.25, the average proportion of elemental nitrogen to plant protein. While not all of the crude protein in a forage is available to the animal as true protein, a forage with a higher level of crude protein generally requires less supplemental protein in the ration. Neutral detergent fiber (NDF) estimates total fiber consisting of cellulose, hemicellulose, and lignin and is often related to intake. Forages with lower NDF values are desirable because the animal can consume more of the forage, requiring fewer ration supplements. Acid detergent fiber (ADF) estimates total cellulose, lignin, and pectin and is often used to predict the energy content of forage. Forages with lower ADF values are desirable because of their higher energy content and generally higher digestibility. Acid detergent lignin (ADL) estimates the lignin fraction, an indigestible fiber with no nutritive value. Lower ADL values are associated with greater forage digestibility.

## RESULTS

Individual test results are presented in Tables 1 - 6. Tables 7 and 8 include average values for hybrids included in both of the past two years at Colby. Average values for hybrids in all 3 tests grown in 2001 are listed in Tables 9 and 10. Hybrid rankings followed similar trends when grown in more than one location or in more than one year. However, some hybrids were more consistent than others.

Species differences were not consistent across locations. Forage sorghum and sorghum-sudan hybrids yielded similarly at Hutchinson and Colby. At Manhattan, sorghum-sudan hybrids significantly out-yielded forage sorghum hybrids.

Forage sorghum hybrids tended to have lower crude protein values, but the various fiber components (NDF, ADF, ADL) were also lower. Brown midrib hybrids of both species tended to have lower ADL values and higher crude protein values; both desirable quality characteristics.

**Table 1. Riley Co. Summer Annual Forage Test, Manhattan, 2001.**

BRAND	NAME	Forage				Grain Days		Ht. (in)	Lodg (%)	Stnd (%)	
		Yield (tons DM/acre)		Moist. (%)		yield (bu/a)	to (blm)				
		Total	Cut 1	Cut 2	Cut 1	Cut 2					
<b>FORAGE SORGHUM</b>											
DEKALB	FS-5	6,819	--	--	71	--	73	65	104	15	--
GARST/AGRIPRO	NO325	6,781	--	--	80	--	1	91	100	0	--
DEKALB	DKS59-09	6,252	--	--	75	--	87	68	75	0	--
GARST	333	5,965	--	--	78	--	2	91	106	60	--
GARST/AGRIPRO	NO348BMR	5,001	--	--	75	--	47	78	104	45	--
VALLEY PREMIUM	UDDER BUSTER BMR	4,922	--	--	74	--	33	77	100	45	--
MATURITY CHECK	ATLAS	4,437	--	--	75	--	35	76	100	17	--
MATURITY CHECK	EARLY SUMAC	3,094	--	--	74	--	73	64	91	70	--
	Averages	5,409	--	--	75	--	44	76	98	31	--
	CV(%)	10	--	--	2	--	12	2	5	82	--
	LSD(0.05)**	983	--	--	3	--	9	3	9	45	--
<b>SORGHUM SUDAN</b>											
MATURITY CHECK	NB280S	12,367	10,334	2,033	80	83	--	--	66	25	--
VALLEY PREMIUM	SWEET CHIEF X-TRA	12,195	9,903	2,293	81	84	--	--	68	2	--
MMR	352/40	11,836	10,532	1,305	85	85	--	--	72	0	--
MMR	327/52 BMR	11,185	9,783	1,402	82	84	--	--	67	2	--
VALLEY PREMIUM	SWEET CHIEF X-TRABMR	10,547	9,280	1,267	82	85	--	--	66	2	--
MMR	328/53 BMR	10,142	8,710	1,432	83	85	--	--	65	0	--
SEED RESOURCE	S-98-1	9,747	8,485	1,262	82	84	--	--	59	8	--
MATURITY CHECK	PIPER	9,366	8,555	811	78	80	--	--	67	25	--
	Averages	10,923	9,448	1,476	82	84	--	--	66	8	--
	CV(%)	6	6	9	2	1	--	--	3	77	--
	LSD(0.05)**	1,131	1,044	228	2	1	--	--	3	11	--
<b>TEST, OVERALL</b>											
	Averages	8,166	--	--	78	--	--	--	82	20	--
	LSD(0.05)**	1,050	--	--	2	--	--	--	6	28	--

\*\*Unless two varieties differ by more than the L.S.D., little confidence can be placed in one being superior to the other.

**Table 2. Riley Co. Summer Annual Forage Test, Manhattan, 2001.**

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
<b>FORAGE SORGHUM</b>									
VALLEY PREMIUM	UDDER BUSTER BMR	7.1	--	51.5	--	32.2	--	4.9	--
DEKALB	DKS59-09	6.3	--	53.4	--	36.1	--	6.9	--
GARST	333	6.2	--	58.1	--	37.8	--	6.8	--
MATURITY CHECK	EARLY SUMAC	6.2	--	53.5	--	35.9	--	7.5	--
MATURITY CHECK	ATLAS	5.9	--	50.9	--	32.5	--	6.3	--
GARST/AGRIPRO	NO325	5.7	--	60.8	--	40.3	--	7.0	--
GARST/AGRIPRO	NO348BMR	5.6	--	50.9	--	32.5	--	5.3	--
DEKALB	FS-5	5.5	--	53.0	--	34.6	--	6.7	--
	Averages	6.0	--	54.0	--	35.2	--	6.4	--
	CV(%)	7.0	--	2.2	--	4.8	--	5.5	--
	LSD(0.05)**	0.8	--	2.1	--	3.0	--	0.6	--
<b>SORGHUM SUDAN</b>									
SEED RESOURCE	S-98-1	12.2	12.4	61.7	60.0	38.3	38.4	7.6	6.5
MMR	352/40	11.0	11.8	64.5	62.5	42.1	42.0	8.9	6.9
MATURITY CHECK	NB280S	10.7	10.3	62.1	61.3	40.6	40.4	8.6	6.8
MMR	328/53 BMR	10.2	11.4	62.9	60.8	40.9	40.2	7.7	6.1
MMR	327/52 BMR	10.1	10.6	59.6	59.1	38.6	38.7	7.6	5.5
VALLEY PREMIUM	SWEET CHIEF X-TRABMR	9.5	10.7	60.2	59.1	40.2	38.2	8.2	5.2
VALLEY PREMIUM	SWEET CHIEF X-TRA	9.3	11.1	63.5	60.5	40.8	39.3	8.2	6.5
MATURITY CHECK	PIPER	9.2	10.9	63.4	59.5	42.0	38.4	8.7	6.7
	Averages	10.3	11.1	62.2	60.4	40.4	39.5	8.2	6.3
	CV(%)	12.3	7.9	2.7	2.3	5.3	3.5	6.0	9.1
	LSD(0.05)**	NS	NS	2.9	NS	NS	2.4	0.9	1.0
<b>TEST, OVERALL</b>									
	Averages	8.2	--	57.1	--	37.8	--	7.3	--
	LSD(0.05)**	1.5	--	2.5	--	3.4	--	0.7	--

\*\*Unless two varieties differ by more than the L.S.D., little confidence can be placed in one being superior to the other.

**Table 3. Reno Co. Summer Annual Forage Test, Hutchinson, 2001.**

BRAND	NAME	Forage				Grain Days		Ht. (in)	Lodg (%)	Stnd (%)	
		Yield (tons DM/acre)		Moist. (%)		yield (bu/a)	to blm				
		Total	Cut 1	Cut 2	Cut 1						Cut 2
<b>FORAGE SORGHUM</b>											
DEKALB	FS-5	10,132	--	--	67	--	31	77	68	--	102
WARNER	2-WAY F-145	9,929	--	--	66	--	10	80	68	--	122
WARNER	2-WAY BMR	8,886	--	--	66	--	30	74	68	--	90
MATURITY CHECK	EARLY SUMAC	8,816	--	--	65	--	21	67	72	--	86
DEKALB	DKS59-09	8,639	--	--	65	--	30	71	44	--	132
VALLEY PREMIUM	UDDER BUSTER BMR	8,504	--	--	65	--	19	76	64	--	87
	Averages	9,151	--	--	66	--	23	74	64	--	103
	CV(%)	6	--	--	4	--	15	3	9	--	6
	LSD(0.05)**	1,005	--	--	NS	--	6	4	11	--	10
<b>SORGHUM SUDAN</b>											
TRIUMPH	SUPERSWEET 10	10,021	--	--	66	--	--	63	55	--	98
VALLEY PREMIUM	SWEET CHIEF X-TRA	9,571	--	--	66	--	--	61	61	--	99
VALLEY PREMIUM	SWEET CHIEF X-TRABMR	9,202	--	--	65	--	--	64	57	--	98
MATURITY CHECK	NB280S	8,943	--	--	62	--	--	59	58	--	89
SEED RESOURCE	S-98-1	7,856	--	--	66	--	--	63	57	--	85
MATURITY CHECK	PIPER	7,692	--	--	50	--	--	59	60	--	88
	Averages	8,881	--	--	63	--	--	62	58	--	93
	CV(%)	10	--	--	2	--	--	2	5	--	4
	LSD(0.05)**	1,568	--	--	3	--	--	2	NS	--	7
<b>TEST, OVERALL</b>											
	Averages	9,016	--	--	64	--	--	68	61	--	98
	LSD(0.05)**	1,271	--	--	3	--	--	3	8	--	9

**Table 4. Reno Co. Summer Annual Forage Test, Hutchinson, 2001.**

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
<b>FORAGE SORGHUM</b>									
WARNER	2-WAY BMR	6.5	--	51.6	--	32.0	--	4.6	--
WARNER	2-WAY F-145	6.3	--	54.5	--	33.3	--	5.3	--
DEKALB	DKS59-09	6.2	--	54.6	--	33.5	--	5.0	--
VALLEY PREMIUM	UDDER BUSTER BMR	6.0	--	51.7	--	32.4	--	4.4	--
MATURITY CHECK	EARLY SUMAC	5.2	--	48.3	--	33.0	--	5.8	--
DEKALB	FS-5	4.8	--	55.6	--	34.4	--	5.7	--
	Averages	5.8	--	52.7	--	33.1	--	5.1	--
	CV(%)	12.5	--	2.9	--	3.8	--	5.0	--
	LSD(0.05)**	NS	--	2.8	--	NS	--	0.5	--
<b>SORGHUM SUDAN</b>									
SEED RESOURCE	S-98-1	10.5	--	56.0	--	29.0	--	4.5	--
VALLEY PREMIUM	SWEET CHIEF X-TRABMR	9.0	--	55.8	--	31.2	--	4.5	--
VALLEY PREMIUM	SWEET CHIEF X-TRA	7.8	--	57.0	--	33.2	--	5.3	--
TRIUMPH	SUPERSWEET 10	7.5	--	55.1	--	32.1	--	5.0	--
MATURITY CHECK	PIPER	7.2	--	61.7	--	37.1	--	6.8	--
MATURITY CHECK	NB280S	6.5	--	57.7	--	34.9	--	5.9	--
	Averages	8.1	--	57.2	--	32.9	--	5.3	--
	CV(%)	12.4	--	1.7	--	3.0	--	7.2	--
	LSD(0.05)**	1.8	--	1.7	--	1.8	--	0.7	--
<b>TEST, OVERALL</b>									
	Averages	7.0	--	55.0	--	33.0	--	5.2	--
	LSD(0.05)**	1.6	--	2.2	--	2.0	--	0.6	--

\*\*Unless two varieties differ by more than the L.S.D., little confidence can be placed in one being superior to the other.

**Table 5. Thomas Co. Irr. Summer Annual Forage Test, Colby, 2001.**

BRAND	NAME	Forage					Grain Days		Ht. (in)	Lodg (%)	Stnd (%)
		Yield (tons DM/acre)			Moist. (%)		yield (bu/a)	to blm			
		Total	Cut 1	Cut 2	Cut 1	Cut 2					
<b>FORAGE SORGHUM</b>											
WARNER	2-WAY F-145	15,536	--	--	76	--	6	98	108	--	119
DEKALB	DKS59-09	14,471	--	--	75	--	84	78	75	--	102
SEED RESOURCE	F00-1	14,330	--	--	68	--	70	74	84	--	112
AGRIPRO	HIGH ENERGY II	14,247	--	--	75	--	3	99	105	--	106
KAYSTAR	FORARI IV	14,109	--	--	76	--	0	98	107	--	65
BUFFALO	CANEX BMR208	13,956	--	--	70	--	52	76	90	--	88
MATURITY CHECK	EARLY SUMAC	13,887	--	--	71	--	47	73	91	--	74
SEED RESOURCE	F-97-1	13,824	--	--	74	--	54	83	97	--	82
SEED RESOURCE	F00-2	13,707	--	--	74	--	55	79	95	--	107
DEKALB	FS-5	13,119	--	--	75	--	35	82	103	--	82
MMR	327/36 BMR	13,114	--	--	78	--	0	106	107	--	82
GARST/AGRIPRO	NO325	13,033	--	--	78	--	0	101	81	--	94
BUFFALO	CANEX	12,904	--	--	73	--	39	76	99	--	94
SEED RESOURCE	F00-3	12,796	--	--	73	--	25	88	93	--	42
BUFFALO	CANEX BMR310	12,071	--	--	72	--	41	77	87	--	100
BUFFALO	CANEX II	11,879	--	--	72	--	29	78	97	--	107
MMR	327/23 BMR	11,872	--	--	77	--	28	86	99	--	68
MATURITY CHECK	ATLAS	11,687	--	--	76	--	18	89	103	--	59
GARST/AGRIPRO	NO348BMR	11,682	--	--	75	--	20	85	105	--	76
MMR	327/35 BMR	11,402	--	--	75	--	34	85	92	--	82
VALLEY PREMIUM	UDDER BUSTER BMR	10,751	--	--	75	--	34	86	101	--	65
WARNER	2-WAY BMR	10,641	--	--	74	--	23	86	97	--	75
	Averages	12,955	--	--	74	--	32	86	96	--	85
	CV(%)	7	--	--	3	--	33	2	6	--	20
	LSD(0.05)**	1,460	--	--	4	--	17	2	9	--	29
<b>SORGHUM SUDAN</b>											
BUFFALO	GRAZEX IIW	14,565	11,599	2,966	70	68	--	72	103	--	--
BUFFALO	GRAZEX BMR727	13,870	11,436	2,434	74	59	--	80	93	--	--
BUFFALO	GRAZEX II	13,641	11,094	2,547	71	63	--	75	103	--	--
VALLEY PREMIUM	SWEET CHIEF X-TRA	13,604	11,457	2,147	73	62	--	71	89	--	--
MMR	352/40	13,337	11,350	1,987	76	57	--	88	95	--	--
TRIUMPH	SUPERSWEET 10	13,308	10,074	3,233	75	68	--	73	90	--	--
VALLEY PREMIUM	SWEET CHIEF X-TRABMR	12,921	11,045	1,876	75	65	--	78	93	--	--
MMR	327/52 BMR	12,753	10,411	2,342	73	65	--	79	91	--	--
BUFFALO	GRAZEX BMR720	12,645	10,291	2,355	75	65	--	74	93	--	--
SEED RESOURCE	S-98-1	12,619	10,306	2,313	75	59	--	79	91	--	--
MATURITY CHECK	NB280S	12,530	10,180	2,351	74	64	--	69	96	--	--
MATURITY CHECK	PIPER	12,150	9,487	2,663	67	57	--	71	94	--	--
BUFFALO	CANEX BMR702	11,660	10,071	1,589	76	49	--	80	83	--	--
MMR	328/53 BMR	11,507	9,347	2,160	75	60	--	86	90	--	--
	Averages	12,936	10,582	2,355	73	62	--	77	93	--	--
	CV(%)	8	8	24	2	10	--	3	4	--	--
	LSD(0.05)**	1,634	1,453	NS	3	10	--	4	6	--	--
<b>TEST, OVERALL</b>											
	Averages	12,948	--	--	74	--	--	82	95	--	--
	LSD(0.05)**	1,541	--	--	3	--	--	3	8	--	--

\*\*Unless two varieties differ by more than the L.S.D., little confidence can be placed in one being superior to the other.



**Table 6. Thomas Co. Irr. Summer Annual Forage Test, Colby, 2001.**

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
<b>FORAGE SORGHUM</b>									
MMR	327/35 BMR	6.4	--	53.6	--	35.5	--	6.4	--
BUFFALO	CANEX BMR208	6.0	--	48.5	--	31.1	--	5.7	--
MMR	327/36 BMR	6.0	--	56.3	--	37.0	--	5.8	--
DEKALB	DKS59-09	5.9	--	45.1	--	31.0	--	6.1	--
GARST/AGRIPRO	NO348BMR	5.9	--	50.9	--	33.5	--	5.7	--
SEED RESOURCE	F00-3	5.9	--	52.1	--	32.6	--	5.2	--
MATURITY CHECK	EARLY SUMAC	5.8	--	45.6	--	29.0	--	6.5	--
SEED RESOURCE	F00-1	5.8	--	46.9	--	32.4	--	6.9	--
SEED RESOURCE	F-97-1	5.7	--	54.5	--	36.6	--	6.5	--
WARNER	2-WAY BMR	5.7	--	49.3	--	31.6	--	5.1	--
MMR	327/23 BMR	5.4	--	49.6	--	32.2	--	5.3	--
BUFFALO	CANEX	5.4	--	48.3	--	31.3	--	6.4	--
SEED RESOURCE	F00-2	5.4	--	48.9	--	32.4	--	6.7	--
VALLEY PREMIUM	UDDER BUSTER BMR	5.4	--	49.6	--	32.0	--	5.4	--
BUFFALO	CANEX II	5.1	--	49.7	--	33.4	--	6.2	--
BUFFALO	CANEX BMR310	5.1	--	50.3	--	31.4	--	5.3	--
WARNER	2-WAY F-145	5.0	--	59.7	--	40.0	--	7.7	--
GARST/AGRIPRO	NO325	4.8	--	61.1	--	40.4	--	7.6	--
AGRIPRO	HIGH ENERGY II	4.8	--	58.6	--	38.1	--	6.9	--
MATURITY CHECK	ATLAS	4.7	--	52.0	--	33.8	--	6.1	--
DEKALB	FS-5	4.7	--	52.6	--	35.6	--	7.1	--
KAYSTAR	FORARI IV	4.2	--	60.6	--	40.9	--	8.0	--
	Averages	5.4	--	52.0	--	34.2	--	6.3	--
	CV(%)	12.6	--	6.2	--	7.5	--	8.7	--
	LSD(0.05)**	1.1	--	5.3	--	4.2	--	0.9	--
<b>SORGHUM SUDAN</b>									
MMR	327/52 BMR	6.2	8.4	58.5	62.8	37.1	34.7	5.8	4.7
MMR	352/40	6.1	7.2	61.0	65.6	40.2	36.6	7.5	5.6
BUFFALO	GRAZEX BMR720	5.9	7.1	57.4	63.8	36.6	36.0	6.1	5.1
MMR	328/53 BMR	5.9	8.0	59.6	64.5	38.0	35.7	5.8	4.9
BUFFALO	GRAZEX BMR727	5.8	7.9	58.3	63.6	37.5	35.2	6.5	5.3
SEED RESOURCE	S-98-1	5.8	7.9	57.7	64.1	37.3	35.8	6.2	5.3
BUFFALO	CANEX BMR702	5.6	8.7	57.5	63.4	35.6	33.3	5.4	4.4
VALLEY PREMIUM	SWEET CHIEF X-TRABMR	5.5	6.7	58.1	63.8	37.2	35.0	6.1	4.6
MATURITY CHECK	NB280S	5.4	6.3	56.7	64.9	37.7	37.3	7.8	5.8
TRIUMPH	SUPERSWEET 10	5.2	8.5	58.2	62.7	38.1	35.1	7.0	5.5
VALLEY PREMIUM	SWEET CHIEF X-TRA	5.2	7.3	57.9	64.8	38.2	36.7	6.8	5.7
BUFFALO	GRAZEX IIW	5.2	6.9	61.3	64.4	40.3	37.8	7.4	6.2
BUFFALO	GRAZEX II	5.0	6.8	62.1	64.6	41.4	37.7	7.8	6.0
MATURITY CHECK	PIPER	3.3	6.9	65.0	64.8	43.6	37.3	8.8	6.3
	Averages	5.4	7.5	59.2	64.1	38.5	36.0	6.8	5.4
	CV(%)	16.2	10.9	2.9	1.6	3.4	2.2	6.5	5.0
	LSD(0.05)**	1.5	1.4	2.9	1.7	2.2	1.3	0.7	0.5
<b>TEST, OVERALL</b>									
	Averages	5.4	--	54.8	--	35.9	--	6.5	--
	LSD(0.05)**	1.3	--	4.1	--	3.2	--	0.8	--

\*\*Unless two varieties differ by more than the L.S.D., little confidence can be placed in one being superior to the other.

**Table 7. Thomas Co. Irr. Summer Annual Forage Test, Colby, 2 - Year Averages.**

BRAND	NAME	Forage					Grain Days		Ht. (in)	Lodg (%)	Stnd (%)
		Yield (tons DM/acre)			Moist. (%)		yield (bu/a)	to blm			
		Total	Cut 1	Cut 2	Cut 1	Cut 2					
<b>FORAGE SORGHUM</b>											
MATURITY CHECK	EARLY SUMAC	11,582	--	--	73	--	45	75	91	7	70
BUFFALO	CANEX BMR208	10,911	--	--	71	--	48	76	93	8	89
BUFFALO	CANEX II	9,860	--	--	73	--	39	77	100	3	97
BUFFALO	CANEX	9,777	--	--	73	--	40	76	98	0	81
MATURITY CHECK	ATLAS	9,682	--	--	76	--	24	87	101	0	59
	Averages	10,064	--	--	75	--	38	82	97	10	82
<b>SORGHUM SUDAN</b>											
BUFFALO	GRAZEX IIW	13,039	10,064	2,976	76	72	--	72	93	--	--
BUFFALO	GRAZEX II	12,096	9,580	2,517	77	70	--	75	90	--	--
TRIUMPH	SUPERSWEET 10	11,973	8,934	3,038	80	73	--	73	82	--	--
MATURITY CHECK	PIPER	11,527	8,246	3,282	75	66	--	71	94	--	--
BUFFALO	GRAZEX BMR727	11,388	9,310	2,078	79	66	--	80	83	--	--
MMR	327/52 BMR	11,128	9,133	1,995	78	70	--	79	85	--	--
MATURITY CHECK	NB280S	10,680	8,589	2,091	78	70	--	69	90	--	--
	Averages	11,263	8,969	2,294	79	69	--	77	85	--	--
<b>TEST, OVERALL</b>											
	Averages	10,578	--	--	76	--	49	81	91	7	83

**Table 8. Thomas Co. Irr. Summer Annual Forage Test, Colby, 2 - Year Averages.**

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
<b>FORAGE SORGHUM</b>									
MATURITY CHECK	EARLY SUMAC	6.0	--	50.4	--	33.1	--	6.5	--
BUFFALO	CANEX BMR208	5.7	--	53.3	--	34.2	--	5.7	--
MATURITY CHECK	ATLAS	5.4	--	54.0	--	33.3	--	6.1	--
BUFFALO	CANEX II	5.4	--	51.5	--	35.2	--	6.2	--
BUFFALO	CANEX	5.4	--	48.9	--	31.3	--	6.4	--
	Averages	5.6	--	54.7	--	36.0	--	6.3	--
<b>SORGHUM SUDAN</b>									
BUFFALO	GRAZEX BMR727	6.9	8.4	59.0	51.6	37.6	50.4	6.5	5.3
MMR	327/52 BMR	6.6	8.9	58.9	51.0	35.5	49.4	5.8	4.7
BUFFALO	GRAZEX II	6.5	7.8	63.2	51.7	44.0	51.1	7.8	6.0
TRIUMPH	SUPERSWEET 10	6.5	8.5	60.7	50.2	40.4	49.4	7.0	5.5
MATURITY CHECK	NB280S	6.5	7.5	59.7	52.0	39.7	50.5	7.8	5.8
BUFFALO	GRAZEX IIW	6.4	7.3	62.6	51.3	41.7	51.1	7.4	6.2
MATURITY CHECK	PIPER	5.7	8.5	66.0	51.6	43.7	51.2	8.8	6.3
	Averages	6.7	8.2	60.6	51.2	39.5	50.2	6.8	5.4
<b>TEST, OVERALL</b>									
	Averages	6.1	--	56.6	--	36.6	--	6.5	--

**Table 9. 2001, Summer Annual Forages, 3 - Location Averages.**

BRAND	NAME	Forage					Grain Days		Ht. (in)	Lodg (%)	Stnd (%)
		Yield (tons DM/acre)			Moist. (%)		yield (bu/a)	to blm			
		Total	Cut 1	Cut 2	Cut 1	Cut 2					
<b>FORAGE SORGHUM</b>											
DEKALB	FS-5	10,023	--	--	71	--	46	75	92	15	92
DEKALB	DKS59-09	9,787	--	--	72	--	67	72	65	0	117
MATURITY CHECK	EARLY SUMAC	8,599	--	--	70	--	47	68	85	70	80
VALLEY PREMIUM	UDDER BUSTER BMR	8,059	--	--	72	--	29	80	89	45	76
	Averages	9,172	--	--	72	--	33	79	86	31	94
<b>SORGHUM SUDAN</b>											
VALLEY PREMIUM	SWEET CHIEF X-TRA	11,790	10,680	2,220	73	73	--	66	73	2	99
MATURITY CHECK	NB280S	11,280	10,257	2,192	72	74	--	64	73	25	89
VALLEY PREMIUM	SWEET CHIEF X-TRABMR	10,890	10,162	1,572	74	75	--	71	72	2	98
SEED RESOURCE	S-98-1	10,074	9,396	1,787	74	72	--	71	69	8	85
MATURITY CHECK	PIPER	9,736	9,021	1,737	65	68	--	65	74	25	88
	Averages	10,913	10,015	1,915	72	73	--	69	72	8	93
<b>TEST, OVERALL</b>											
	Averages	10,043	--	--	72	--	--	75	79	20	98

**Table 10. Summer Annual Forages, 3 - Location Averages.**

BRAND	NAME	Forage Quality (dry matter basis)							
		Protein (%)		NDF (%)		ADF (%)		ADL (%)	
		Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2	Cut 1	Cut 2
<b>FORAGE SORGHUM</b>									
DEKALB	DKS59-09	6.1	--	51.0	--	33.5	--	6.0	--
VALLEY PREMIUM	UDDER BUSTER BMR	6.1	--	50.9	--	32.2	--	4.9	--
MATURITY CHECK	EARLY SUMAC	5.7	--	49.1	--	32.6	--	6.6	--
DEKALB	FS-5	5.0	--	53.7	--	34.9	--	6.5	--
	Averages	5.8	--	52.9	--	34.2	--	5.9	--
<b>SORGHUM SUDAN</b>									
SEED RESOURCE	S-98-1	9.5	10.1	58.5	62.1	34.9	37.1	6.1	5.9
VALLEY PREMIUM	SWEET CHIEF X-TRABMR	8.0	8.7	58.0	61.5	36.2	36.6	6.3	4.9
MATURITY CHECK	NB280S	7.5	8.3	58.8	63.1	37.7	38.9	7.4	6.3
VALLEY PREMIUM	SWEET CHIEF X-TRA	7.4	9.2	59.5	62.6	37.4	38.0	6.8	6.1
MATURITY CHECK	PIPER	6.6	8.9	63.4	62.2	40.9	37.9	8.1	6.5
	Averages	7.9	9.3	59.6	62.2	37.3	37.7	6.8	5.8
<b>TEST, OVERALL</b>									
	Averages	6.8	--	55.6	--	35.6	--	6.3	--

## APPENDIX: Entrants in the 2001 Kansas Summer Annual Forage Performance Tests.

Brand/Company/Address			Brand/Company/Address		
Crop - Hybrid	Traits	Maturity	Crop - Hybrid	Traits	Maturity
<b>DEKALB</b>			<b>MMR</b>		
Monsanto Seed			MMR Genetics LLC		
7159 n 247th West			PO Box 60		
PO Box 7			Vega, TX 79092		
Mt. Hope, KS 67108			806-267-2379		
316-445-2290			FS - 327/23 BMR		
farmsource.com			FS - 327/35 BMR		
FS - DKS59-09	--	M	FS - 327/36 BMR		
FS - FS-5	--	M	SS - 327/52 BMR		
<b>BUFFALO</b>			SS - 328/53 BMR		
Sharp Bros Seed Company			SS - 352/40		
Box 140			<b>SEED RESOURCE</b>		
Healy, KS 67850			Seed Resource		
316-398-2231			P.O. Box 326		
sharpseed.com			505 East Service Rd.		
FS - CANEX	--	E	Tulia, TX 79088		
FS - CANEX BMR208	BMR	E	806-995-3882		
FS - CANEX BMR310	BMR	E	FS - F00-1		
FS - CANEX II	--	E	FS - F00-2		
SS - CANEX BMR702	BMR	E	FS - F00-3		
SS - GRAZEX BMR720	BMR	E	FS - F-97-1		
SS - GRAZEX BMR727	BMR	E	SS - S-98-1		
SS - GRAZEX II	--	E	<b>TRIUMPH</b>		
SS - GRAZEX IIW	--	E	Triumph Seed Co Inc		
<b>GARST</b>			PO Box 1050		
Garst and AgriPro Seed Co			Hwy 62 Bypass		
615 Main St. PO Box 300			Ralls, TX 79357		
Coon Rapids, IA 50058			800-530-4789		
800-831-1850			triumphseed.com		
garstseed.com			SS - SUPERSWEET 10		
FS - 333	--	L	<b>VALLEY PREMIUM</b>		
FS - HIGH ENERGY II	--	L	Valley Feed & Seed Inc		
FS - NO325	--	M	1903 S Meridian		
FS - NO348BMR	BMR	L	Wichita, KS 67213		
<b>KAYSTAR</b>			316-942-2278		
Kaystar Seed			FS - UDDER BUSTER BMR		
40329 US Hwy 14E			SS - SWEET CHIEF X-TRA		
PO Box 947			SS - SWEET CHIEF X-TRABMR		
Huron, SD 57350			BMR		
605-352-8791			<b>WARNER</b>		
kaystarseed.com			Warner Seeds, Inc.		
FS - FORARI IV	--	M	Box 1877		
			Hereford, TX 79045		
			806-364-4470		
			FS - 2-WAY BMR		
			FS - 2-WAY F-145		

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan 66506

SRP 889

January 2002

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